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ABSTRACT

A frame of reference for studying culture in middle schools was developed. Items for the Middle School Description Survey (MSDS), which was designed to test elements of the ideal middle school culture, were created based on middle school advocacy literature. The items were conceptually categorized according to E. H. Schein's (1985) cultural content model. R-technique factor analysis of the instrument using data from 295 educators failed to support the validity of these conceptual cultural categories, but did identify the existence of a single "g" factor with which most of the items correlated highly. In a separate phase of the study, the MSDS was completed by 146 educators in 7 middle schools. Data from each of the schools were used in separate Q-technique factor analyses in an attempt to determine the instrument's usefulness in identifying distinct groups of individuals in these schools relative to their orientation to the culture construct. A number of identifiable "person clusters" were present in the several schools, with a high degree of uniqueness associated with the orientation of each cluster. These results indicate that the MSDS is a promising tool for measuring organizational culture in middle schools. A 48-item list of references, a list of items included in the MSDS, and 4 data tables are included. (Author/TJH)

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OPERATIONALIZATION OF A FRAME OF REFERENCE FOR STUDYING ORGANIZATIONAL CULTURE IN MIDDLE SCHOOLS

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ABSTRACT

The middle school is an example of an institution which has arisen as a result of a particular set of idealized cultural values and assumptions; yet it is unclear how closely cultures which exist in actual middle schools mirror the idealized middle school culture. In the present study, an attempt was made to operationalize a frame of reference for studying culture in middle schools. Middle school advocacy literature served as a basis for creating items for the Middle School Description Survey (MSDS), which was designed to test elements of the ideal middle school culture. The items were conceptually categorized according to Schein's (1985) cultural content model. R-technique factor analysis of the instrument using data from 295 educators failed to support the validity of these conceptual cultural categories, but did identify the existence of a single "g" factor with which a majority of the items correlated highly.

In a separate phase of the study, the MSDS was completed by 146 educators in seven middle schools. Data from each of the schools were used in separate Q-technique factor analyses in an attempt to determine the instrument's usefulness in identifying distinct groups of individuals in these schools relative to their orientation to the culture construct. A number of identifiable "person clusters" were present in the several schools, with a high degree of uniqueness associated with the orientation of each cluster. These results indicate that the MSDS is a promising tool for measuring organizational culture in middle schools.

OPERATIONALIZATION OF A FRAME OF REFERENCE FOR STUDYING ORGANIZATIONAL CULTURE IN MIDDLE SCHOOLS

Organizational culture may be viewed as a vehicle by which people attribute meaning to the numerous ambiguous events occuring in the complex organizations in which they work. Although unique cultures develop within individual organizations, all organizations of a particular type or "species" tend to develop their own specialized cultural features. In the present study, the middle school serves as an organizational "species" to which cultural assertions are applied. The middle school is an interesting unit of analysis, for at least two reasons: first, since the middle school is a rather recent addition to the United States educational system, it would be considered to have a more evolving than stable culture; and second, since the middle school has arisen as an alternative to the previously established junior high school, it would be interesting to determine how successful the middle school has been in developing an institutional identity distinct from that of the junior high.

Middle school proponents (e.g., George, 1983) have suggested that certain cultural factors should be in place in middle schools; however, it is unclear to what degree these factors exist, and to what extent persons who work in middle schools see these factors as relevant to their schools' mission. Thus, the purposes of the present study were (a) to define an "ideal type" middle school culture as espoused by middle school advocates, (b) to develop an instrument to measure middle school educators' perceptions of the existence of this ideal culture in the schools in which they work, and (c) to determine what types of cultures actually exist within selected middle schools.

Review of the Literature

Defining Organizational Culture

Recent definitions of culture have focused on the meaning of organizational events (Bolman & Deal, 1984; DeRoche, 1987; Erickson, 1987;

Morgan, 1986) and upon group problem solving dynamics (Lortie, 1975; Schein, 1985; Van Maanen & Barley, 1985). Bolman and Deal (1984) described organizational life as a series of ambiguous events and conceived of culture as a set of processes that help a group sort through these ambiguities. Similarly, Morgan (1986) defined culture as "a process of reality construction that allows people to see and understand particular events, actions, objects, utterances or situations in distinctive ways" (p. 128).

Culture may also be viewed as a learned product of group experience (Schein, 1985). In this sense, an organization's culture is transmitted to group members who over time learn appropriate organizational responses to problems that arise within the organization. These responses eventually become taken-for-granted assumptions once they have been proven to solve problems reliably over time. Assumptions, in turn, serve as a basis for defining or refining the organization's core mission. This notion of culture as learned problem solving is reflected in the definition of culture as:

> a pattern of basic assumptions. . .developed by a given group as it learns to cope with its problems of external adaptation and internal integration that has worked well enough to be considered valid, and . . .to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. (Schein, 1985, p. 9)

This definition of culture was used for the purposes of the present study since this view synthesizes the major conceptual definitions found in the literature, and since the definition can be operationalized in an appropriately broad conceptual framework.

Levels of Culture

Schein (1985) conceived of organizational culture as operating at three

levels. At the most visible level are the organization's artifacts, i.e., its constructed physical and social environment. Elements of culture at this level include specific organizational technologies, art (including myths, symbols, stories, and legends), and overt behaviors. At an intermediate level, culture is manifested in organizational values. At this level, events are analyzed and assigned meaning in accordance with a sense of what ought to be. These values serve as a guide for decision making behaviors.

Cultural values tend to facilitate reliable solutions to organizational problems. Those solutions that consistently produce desired results over time are transformed into habitual assumptions. Assumptions comprise the deepest level of culture, and offer a perspective for perceiving the way things are by nature; thus assumptions become windows to the world of organizational events.

The Content of Culture

In defining what manifests culture in a given social setting, Schein (1985) proposed five categories of assumptions that all cultures consider. These categories of cultural assumptions address the following issues: humanity's relationship to nature, the nature of reality and truth, the nature of human nature, the nature of human activity, and the nature of human relationships. These categories ". . .identify the paradigm by which the members of a group perceive, think about, feel about, and judge situations and relationships. . ." (Schein, 1985, p. 111). A brief discussion of each of these categories of assumptions follows.

First, assumptions about humanity's relationship to nature focus upon the extent to which a given culture perceives that its environment can be controlled. In an organizational sense, "nature" refers to the organization's

perceptions of its external environment. An organization may feel that it has almost total power over its environment, must harmonize with its environment, or is practically controlled by its environment. If the organization is able to adjust to demands made by its environment, its survival will be assured.

Second, organizational culture includes assumptions regarding a sense of the nature of reality and truth. These assumptions focus "on how members of a group take an action, how they determine what is relevant information, and when they have enough of it [information] to determine what to do" (Schein, 1985, p. 88). Assumptions about time and space (i.e., how time should be spent and how work space should be utilized) are also included in this category.

A third set of assumptions involves the nature of human nature. These assumptions address the intrinsic nature of human beings, with some cultures viewing humans as basically good, others viewing them as basically evil, and still others viewing them as mixed or neutral. A popular organizational adaptation of this orientation is McGregor's (1960) Theory X-Theory Y typology. According to this typology, the Theory X person assumes that people are inherently lazy and must be externally controlled. Contrariwise, the Theory Y person assumes that people are self-motivated, view work as being as natural as play, and need only to be directed rather than controlled.

A fourth set of assumptions included in a group's culture concern the nature of human activity. These assumptions define the behaviors that are appropriate and acceptable within a given culture. At the extremes of assessing the nature of human activity are an orientation toward "doing" and an orientation toward "being" (Schein, 1985). In this typology, two types of orientations are delineated--those which stress "task" activities and those which stress "relationship" activities. A blending of the two orientations

has been termed a "being-in-becoming" orientation (Schein, 1985).

A final set of cultural assumptions involves the nature of human relationships. These assumptions define "the proper way for individuals to relate to each other in order to make the group safe and comfortable" (Schein, 1985, p. 104). At one extreme is the organization that operates in accordance with structured organizational charts and that works hard to minimize personal relationships among employees. At the other extreme is the organization that reduces power distance between superiors and subordinates, and encourages development of collaborative relationships among its employees.

Features of Culture in Educational Organizations

As previously noted, it is possible to extend the unit of analysis of organizational culture from a single organization to all organizations of a particular type. For instance, Meyer, Scott, and Deal (1983) proposed that institutional organizations, and more particularly educational organizations, are structured according to a different organizational model than are technical organizations. The technical model of organizational structure is based upon a series of relationships among the various technical production processes that go on in an organization, and depicts organizational structure as a blueprint for goals and activities. By contrast, the institutional model views relationships among the various subunits that make up the organization as being more loosely related to one another. Institutional organizations would fit into an organizational category described as "loosely organized systems" (Kaplan, 1982) or "loosely coupled" systems (Weick, 1976).

The formal organizational structure of educational organizations helps to preserve their social image by giving these organizations the "appearance of rationality" (Meyer, 1984; Meyer & Rowan, 1978). Meyer, Scott, and Deal (1983)

cite this "appearance of rationality" theme as an explanation for the wide-scale homogeneity of school structures in American school systems. Schools adapt their hierarchical arrangements to fit the generally accepted model of schooling, yet instruction and other technical activities are adapted to the needs of each school and, therefore, intentionally "decoupled" from schools' formal organizational structures (Meyer & Rowan, 1978; Scott, 1987). Stated differently, schools exist primarily to maintain a "schooling rule" (Meyer & Rowan, 1978), i.e., the sum total of all the ritualistic requirements schools must meet in order to conform to society's image of what a school should be.

The Role of Organizational Culture in Change Processes

Morgan (1986) has argued that culture is in essence the enactment of shared reality. Changes in shared reality, and, as a result, in group cultures are frequently very difficult to implement. In many cases, this is due in part to the presence of many different and competing value systems within a single organization (Morgan, 1986). These competing value systems may bring about organizational "subcultures" that struggle for control of an organization.

Even when cultural changes are implemented, Schein (1985) warns that much of what is called change involves mere surface rituals rather than fundamental structural adaptations which sustain these rituals. Watzlawick, Weakland, and Fisch (1974) differentiate these two levels of change, labeling as "first order change" mere structural rearrangements, and as "second order change" actual changes in the frames of reference with which organizational members view problems. Considering that many changes never evolve beyond this first order, Sarason (1971) concludes that as regards most educational change processes, "the more things change the more they remain the same" (p. 2).

There are examples, however, of deeper-level second-order changes that

take place within schools. Second-order changes require groups to redefine values and assumptions, and gain legitimacy only after they are subjected to "social evaluations, such as the endorsement of legislatures or professional agencies" (Rowan, 1982, p. 259). Sarason (1971) recognized that true change often takes place when an organizational member observes existing behavioral regularities that do not meet organizational needs, and proposes a set of new "intended outcomes" and a set of strategies for realizing these outcomes.

Applying the Cultural Framework to Middle Schools

Weber (1969) proposed the ideological development of "ideal types" against which actual sociological phenomena can be compared. By applying a cultural framework to various organizational "species" and "subspecies" (McPherson et al., 1986), one can distinguish between an "ideal type" culture for all organizations within a given "species" or "subspecies," and the actual culture present within any single organization of that particular type. For instance, an ideal type middle school culture could serve as a yardstick by which the culture of a particular middle school can be measured. Middle school culture in its "ideal type" is essentially a product of various concepts about middle-level education that advocates have developed as a rationale for the middle school. As educators began to consider the subject-centered junior high school as a less than successful institution, it became increasingly necessary to seek new values and behaviors that would redefine the mission of their schools (Conant, 1960; Regan, 1971). The problem of redefining the mission of the junior high school eventually led to the creation of the middle school, a new institution that would hopefully prove to be more effective in meeting the needs of young adolescents. In designing the middle school, educators first sought to determine those practices of the

junior high which had failed to work, and then set out to replace them with new practices (Alexander & George, 1981; Eichhorn, 1966).

As Moss (1969) observed, this massive reprogramming and reorganization effort called upon leaders at the middle level to make a number of organizational changes. The middle school's links to the high school would be severed by moving out the ninth grade. Rigid scheduling would be replaced by a scheduling model which resembled a marriage between the elementary and high school schedules (Baetzel, 1971). Teachers would be "reprogrammed" to focus upon teaching students rather than subject matter. To facilitate this reorganization of the middle grades, middle school advocates (e.g., Alexander, 1968) developed assumptions about what intermediate level education should be, and encouraged school administrators to experiment with these assumptions.

The problem with this approach to implementing the middle school concept was that, in most cases, classroom teachers were not included in the initial planning phases which brought about the development of individual middle schools. Not all teachers accepted the assumptions of the middle school; in fact, some teachers were not even formally introduced to the assumptions. Many teachers were unsure why their junior high schools had been converted to middle schools, and, as a result, continued to function in their work roles much as they had when their schools bore the name "junior high school."

In the face of widespread confusion in the early implementation of the middle school concept, many schools made the conversion from junior high to middle school with few concrete goals in mind (Alexander, 1974). Many schools continued to operate in the same way they had in the past; however, the acceptance of new school names, and in some cases new grade-level structures served to unfreeze the assumption that the junior high organizational pattern

was the only appropriate organizational model for intermediate-level schools.

Not surprisingly, even as early as 1969, Moss recognized goal clarity as a problem of middle schools. Similarly, Alexander (1974) cited "lack of planning" as one of the major problems of the middle school movement, and as one of the major causes of teacher dissatisfaction and turnover in middle schools. Considering this evidence, it is unclear whether a truly effective middle school culture has yet developed. Lack of goal clarity may be the result of a lack of commonly-held assumptions among middle school educators.

In its early years of existence, the middle school dealt primarily with external adaptation problems. Following the demise of the junior high school, the newly-formed structure of the middle school served as a symbol which suggested greater responsiveness to the needs of early adolescent students (Klingele & Siebers, 1980). Hence, the organizational structure of the middle school tended to legitimate the activities going on within the institution although, in many cases, the practices espoused by advocates as distinguishing the middle school from other middle-grade structures were not put into place.

Studies assessing the degree to which middle schools are implementing distinguishing practices suggest that these schools are also having difficulty dealing with internal integration problems, i.e., that first order changes of school policy have been implemented, but that second order conformity to the new structures is lacking. In a survey of 43 New England middle schools, for instance, Gore (1978) found that interdisciplinary planning and flexible scheduling "were used by respondents in all grades but neither were dominant strategies" (p. 10). Similar results were found in studies of middle schools in Ohio (Bohlinger, 1981), Missouri (Beckman, 1981), and North Carolina (McEwin, 1981), and in a national review of middle school practices (Binko &

Lawlor, 1986) as well.

In sharp contrast to these studies focusing on the shortcomings of the middle school are other studies that have focused upon middle schools that are implementing distinguishing practices. George and Oldaker (1985), for instance, surveyed administrators in 130 "exemplary" middle schools. Not surprisingly, their results showed overwhelmingly that these schools conformed to the textbook descriptions of the ideal middle school--90% of these schools organized teachers into interdisciplinary teams, 94% used flexible scheduling, 93% employed advisor-advisee programs, and 100% claimed to organize their programs around the needs of the students. Although the researchers admit the obvious selection bias used in the study, they offer their findings as proof that there are good middle level schools utilizing the practices traditionally espoused by middle school advocates.

Descriptive case studies have also been used by advocates to tout the advantages of middle schools (e.g., Alexander, 1969; Sklarz, 1986). Sklarz (1986), for example, studied a successful middle school during a five-year reorganization effort. Findings indicated that attention given by the school staff to the emergenceof a middle school culture was the factor most related to the continued success of the school as measured by student achievement and by improvement in teacher, student, and parent attitudes toward the school.

Although these studies which focus on exemplary schools provide an excellent picture of the way schools ought to operate, they provide a rather distorted picture of the way the actual typical middle school operates. In fact, evidence from previous research suggests that most middle schools are not functioning as they should. Thus, there is evidence that middle schools have done a good job of handling external adaptation problems through emphasis

upon organizational procedures (Klingele, 1985), yet have done little about internal integration problems (concentrating upon the building of teams within schools dedicated to carrying out the schools' core mission).

Hypotheses

The purposes of the present study were to define an "ideal type" middle school culture based upon the opinions of middle school advocates and to investigate educators' perceptions of the presence of various cultural elements in their schools. In accomplishing these purposes an attitudinal measure called the Middle School Description Survey (MSDS) was developed as a means for collecting data from subjects.

The following null hypothesis was empirically tested in order to make initial judgments as to the construct validity of the measure developed for the purposes of the present study:

(1) No interpretable culture constructs will be obtained when responses on the Middle School Description Survey are intercorrelated and factor analyzed using the R-technique.

Assuming that the above null hypothesis would be rejected, and that the validity of the MSDS would be supported, the following null hypothesis was also proposed for investigation and subjected to empirical testing:

(2) No identifiable clusters of people will emerge when responses for individuals within the selected schools on the Middle School Description Survey are intercorrelated and factor analyzed using the Q-technique.

Methodology

Sample Selection

Two independent samples were utilized for the purposes of the present

study. Sample I included 100 graduate students enrolled in the college of education at a university in Louisiana, and 455 educators from nine middle schools located in a suburban school district in Louisiana. These subjects were administered the MSDS, recording their responses to each item on an "unnumbered graphic scale" (Thompson, 1981). For scoring purposes, the scale was divided into ten scale steps allowing for a moderate amount of item variance. These data were used to establish the validity and reliability of the MSDS, and to test hypothesis one.

Data were also collected from Sample II using the MSDS. This sample consisted of faculty members and administrators (n = 250) from seven middle schools in Louisiana. Four of the schools (A, B, C, and D) were suburban schools each serving a predominantly white student clientele. The other three schools (E, F, and G) were inner-city schools each serving a predominantly black student clientele. MSDS data were collented from this sample via a traditional Q-sort strategy in three of these schools, and via a printed copy of the MSDS employing an unnumbered graphic scale in the remaining four schools. Data from this sample were used in Q-technique factor analyses to determine whether conceptually-distinct clusters of persons could be identified when subjects were factored across items on the MSDS. These analyses were used to test hypothesis two.

Instrumentation

The MSDS consisted of a series of 61 attitudinal items based upon elements of an ideal middle school culture as espoused by various writers of the middle school movement. Items were written to conform with a five-category division of cultural content (Schein, 1985). A list of the items included in the MSDS categorized by cultural content areas is found in

Appendix A. Although one cohort of respondents in Sample II responded to the items via a traditional Q-sorting procedure, the remaining respondents responded via a printed copy of the MSDS scored using an unnumbered graphic scale. Subjects responded to items by drawing a vertical line through the scale at a point between "strongly disagree" and "strongly agree" that best represented their perception of each item. A segmented transparent overlay was used to assign a continuous score ranging from zero to nine for each item. This graphic scale is preferable to traditional numeric Likert scales in that scoring includes more scale steps resulting in larger standard deviations, higher reliabilities of items, and ultimately greater reliability of factors (Thompson, 1981).

Data Collection and Analysis

The 545 subjects in Sample I completed the MSDS. Instruments were distributed to the graduate student cohort (n = 100) of this sample during regular class sessions. The middle school cohort of this sample consisted of 445 subjects from nine different schools. A contact person at each school distributed copies of the MSDS to the subjects within the school, and collected completed instruments over a one-week period. Data from this sample were used to test hypothesis one.

During Phase II, the MSDS was administered to Sample II. In three of the schools the items were personally administered to subjects. These subjects responded via a Q-sorting format. In the remaining four schools, instruments were delivered to a contact person at each school who distributed them to faculty members. Total anonymity of persons and schools was assured. Data from this sample were used in Q-technique factor analyses to test hypothesis two.

Findings

Phase I Factor Analyses

Usable responses were obtained from 225 (50.6%) of the 445 middle school subjects and 70 (70%) of the 100 graduate students for a total sample of 295. Most of the graduate students worked in elementary or secondary schools. Of the 295 respondents, 248 reported that they were working in middle schools.

A series of R-technique factor analyses was performed using the SPSSx FACTOR procedure and the MSDS data from these 295 respondents. The initial principal components analysis yielded 16 factors with prerotation eigenvalues greater than one, with Factor I accounting for 29.6% of the variance, and having an eigenvalue of 18.07 (18.07/.61 = .296). Prior to rotation, 50 of the 61 items were correlated more than |.30| with Factor I. Analysis of the "scree" plot (Cattell, 1966b) of the eigenvalues indicated an initial flattening out of the eigenvalues between Factors I and II, followed by a secondary flattening out somewhere between Factors IV and VII. Five subsequent analyses were performed using solutions extracting between four and seven factors in an attempt to find the most interpretable solution.

These five analyses employed the principal components method of factor extraction and results were rotated to the varimax criterion. Results of each of these analyses yielded a first factor that was saturated with from 39 to 50 items, given an operational definition of item salience using a minimum factor-structure coefficient criterion of |.30|. Results of each of these analyses further indicated that a number of the items correlated with multiple factors, thus impeding the interpretability of the results. It is interesting to note, however, that practically all of the items correlated well with at least one of the factors across the various solutions.

In an attempt to eliminate possible confounding of the results due to characteristics of the subjects within the sample, a second round of factor analyses was run using only the subset of 248 subjects who were currently working in middle schools. Principal components solutions extracting four and five factors were identified, and results were rotated to the varimax criterion. The rotated factor matrices for the four and five factor solutions are presented in Tables 1 and 2, respectively. Results of these analyses involved a first factor that might be characterized as a "g" or general factor, i.e., a factor with which most of the items were highly correlated and suggesting the existence of a unidimensional factor structure. Generally speaking, the presence of a "g" factor does not mean that there is only one interpretable factor, but rather that there is a large overriding factor with additional factors reflecting various nuances of the factor structure.

One rival hypothesis explanation for "g" factor findings involves the possibility that respondents were subject to response set and therefore did not thoughtfully respond to the MSDS items. The intraindividual variance of responses was computed separately for each of the subjects, and subjects with minimal variable response patterns were eliminated from a follow-up factor analysis. This principal components analysis was run using only those cases in the middle school subset of the sample whose total item variance exceeded 3.5 (n = 217). Five principal components were extracted, and results were rotated to the varimax criterion. Results of this analysis were similar to those obtained in the previous analyses, and the large first factor had a prerotation eigenvalue of 18.170. Hence, the identification of the g-factor structure was confirmed.

In a further attempt to explore the middle school culture construct, two

second order factor analyses were performed to determine whether more generalized groupings of the items in the questionnaire existed. These analyses utilized program SECONDOR, (Thompson, 1989), and MSDS data from the 248 subjects currently working in middle schools. As the results of the previous analyses had indicated a relatively high degree of correlation among the factors, for the purposes of the second order analyses, the interfactor correlation matrix for the 16 principal components with prerotation eigenvalues greater than one was rotated to the promax criterion. Promax rotation yields oblique factors, and hence produces correlation among the factors. The first of the two second order analyses utilized a promax pivot power of two, while the second utilized a promax pivot power of four. The two resultant 16 X 16 interfactor correlation matrices were factor analyzed using principal components extraction with results rotated to the varimax criterion.

Five second order principal components were extracted in each of these two second order analyses. The analysis using the 16-factor structure matrix rotated with promax pivot power equal to two resulted in a product matrix ($P_{61X16} * P_{16X5} = P_{61X5}$) (Gorsuch, 1983, pp. 246-248) on which the first factor was saturated with 38 of the 61 items using a minimum factor-structure coefficient criterion of |.30|. Many of the items were correlated with more than one factor. The analysis using the first-order structure matrix rotated with promax pivot power equal to four yielded similar results. Thus, the results of the second-order factor analyses are consistent with those obtained using the first order analyses, indicating that a unidimensional "g" factor is saturating the factor space underlying perception of middle school culture.

As a final step in the analysis of the Phase I data, confirmatory factor analyses were performed. The purpose of confirmatory factor analysis is to

determine the goodness-of-fit of an actual factor structure with a predicted structure (Long, 1983a). These analyses were performed using the confirmatory factor analysis package LISREL VI (Joreskog & Sorbom, 1986). Confirmatory methods extend the usefulness of the exploratory methods by analyzing the extent to which "endogenous" latent variables, those variables occuring within the factor analytic model, can be explained by "exogenous" variables, a set of theoretical variables determined outside the model (Long, 1983b).

In performing these analyses, the goodness-of-fit of the a priori item categories specified in Appendix A was evaluated. A five factor hypothesis matrix based on expected theoretical factors using Schein's (1985) concept of culture was employed. Two confirmatory analyses were run, one which presumed orthogonality of factors, and one which assumed factors would be correlated.

The analysis performed assuming orthogonality of the five extracted factors yielded a goodness-of-fit index, an adjusted goodness-of-fit index, and a root mean square residual statistic of 0.593, -5.312, and 0.259, respectively, indicating that the theoretical model did not match the observed factor structure. The chi-square fit statistic was 4910.30 ($p < .001$). The statistically significant p value associated with this chi-square statistic further indicated that the model did not adequately reproduce the observed correlation matrix (Long, 1983b). Similar results were obtained for the confirmatory factor analysis assuming correlation among the five extracted factors. This analysis yielded a goodness-of-fit index, an adjusted goodness-of-fit index, and a root mean square residual statistic of 0.657, -3.914, and 0.066, respectively. The chi-square fit statistic was 3568.66 ($p < .001$), affirming that the theoretical model did not match the observed factor structure. Inter-factor correlations for the non-orthogonal maximum

likelihood factors from this solution were also computed. All off-diagonal entries in correlational table were greater than .88, indicating a very high degree of intercorrelation among the five factors. These findings lend additional support to the previous findings which suggested the presence of a unidimensional or "g"-factor structure, with the four additional interpreted factors appearing to be nuances of the large first factor.

An alternative method of assessing fit of an observed structure to a theoretical model has been discussed by Gorsuch (1983) and psychometrically elaborated by Thompson (1986). This "Procrustean" method involves projecting the observed and theoretical solutions into the same factor space by rotating actual results to the "best fit" position with the expected factors. The cosines of the angles among the paired factors across the observed and theoretical solutions are correlation coefficients, and hence provide estimates of the degree of goodness (or badness) of fit between the two solutions. These cosines were computed using the computer program RELATE (Veldman, 1967) which also "recreates" the observed factor matrix to best fit the theoretical factor matrix.

Although the first three factors appeared to adequately meet goodness-of-fit criteria, the remaining two factors were weakly related to the expected structure. In addition, several of the observed factors were rather highly correlated with theoretical factors other than those they were supposed to represent. Thus, these results tended to confirm the previous findings.

On the basis of these various factor analytic results, it was concluded that the responses of the sample on the MSDS correlate such that middle school culture is viewed as a primarily unidimensional construct. The results did not confirm the theoretical expectations that middle school culture would be

based on Schein's (1985) categorization of the elements of organizational culture, but did lend support to the idea that organizational culture can be operationally defined and tested using this nonintrusive measure.

Phase I Reliability Analyses

Alpha reliability estimates for the MSDS were computed using the SPSSx RELIABILITY procedure. Separate estimates were computed on the whole instrument and the expected subscales using the entire sample (n = 295) and the subset of 248 subjects who were working in middle schools. The alpha reliability for the whole scale using data from all 295 subjects was .9423. Data collected from the subset of 248 subjects who worked in middle schools yielded an essentially equivalent coefficient alpha of .9439. These results suggest that the MSDS items are very internally consistent and that a single composite score is reasonably reliable. Reliability estimates for the expected subscales were considerably lower, more than likely as a result of the unidimensionality of the construct being measured, as suggested by the R-technique factor analytic results. The coefficient alphas for these subscales using data collected across the two cohorts ranged from .6979 to .8585.

Phase II Factor Analyses

On the basis of the Phase I analyses of the data, it was determined that more than three-fourths of the 61 items correlated highly with the large first factor (using prerotational factor structure coefficients greater than |.30|), and that practically all of the items correlated well with at least one of the postrotational factors regardless of the selected solution. Hence, it was decided that all 61 of the items on the original form of the instrument would be retained prior to the instrument's substantive application during Phase II of the present study. The Phase I factor analytic data supported the

construct validity of the instrument, although the actual factor structure did not match the expected theoretical structure. Furthermore, alpha reliability estimates indicated that the data collected from the Phase I sample tended to be internally consistent, offering confidence in the measure's use as a data collection tool during Phase II of the study.

MSDS data were collected for the 250 subjects in the seven middle schools in Sample II. To ensure confidentiality of subjects' responses, the seven schools were identified only as Schools A through G. The numbers of subjects responding in Schools A through G were 28, 27, 20, 18, 17, 14, and 22, respectively. The total number of new subjects employed in Phase II was 146.

In three of these schools (Schools A, B, and C), data were collected using a conventional Q-sort procedure, with the 61 items printed on cards which the subjects sorted into nine hierarchical agree-disagree categories. In the remaining four schools (Schools D through G), data were collected using a printed instrument with an unnumbered graphic scale (Thompson, 1981) provided for the subjects' response to each item. Respondents' ratings of the items were converted to ranked data, with the leftmost mark receiving a rank of "1" while the rightmost item received a rank of "61." Thus, two different data collection strategies were employed to identify person prototypes differentiated by varying perceptions of middle school culture. Conducting analyses across different subject groups and methods increases confidence in the generalizability of results (Gorsuch, 1983, p. 335).

Since this strategy also involves initially collecting data that can be subjected to an R-technique factor analysis, i.e., an analysis exploring variable factors as against person factors, this data set (n = 71) also afforded the opportunity to verify that Phase I "g"-factor findings were

replicable. An R-technique principal components analysis of these data yielded a prerotation eigenvalue for Factor I of 15.81, thus indicating that Phase I "g"-factor findings were not artifacts of sampling.

As a further test of the integrity of subjects' responses to the items, three of the first 30 items were randomly selected to be repeated later in the printed version of the instrument. Thus, the subjects responding via this format (n = 71) had two sets of responses for these items. Each respondent's scores on the first presentation of the three items were totalled, and were then compared with the sum of the same three items when presented the second time. The correlation between these two sums was .669 (r^2 = .447), indicating a relatively high degree of consistency across the two item sets, and offering further evidence that the results in Phase I were not artifacts of response set. This figure approaches the upper bound dictated by the limited reliability of scores computed for only three items.

A separate Q-technique factor analysis was performed for each school in which the data were collected. The purpose of these analyses was to identify clusters of persons within each school relative to the middle school culture construct. Q-technique factor analysis (Cattell, 1966a) factors people across variables, creating clusters of people who represent prototypes of individuals who respond differently than others on a given set of items. Since the R-technique factor analyses conducted during Phase I of the study failed to identify but one structural construct underlying the instrument, the foregoing analyses were "unstructured" Q-sorts (Kerlinger, 1986, pp. 587-592).

The seven Q-technique factor analyses were performed using the SPSSx FACTOR procedure. Q-factors were extracted using the principal components method, and results were rotated to the varimax criterion. From three to

seven components were extracted across the seven schools, and person factors were determined based upon a minimum factor-structure coefficient criterion of ±0.40 in Schools A through C, and ±0.45 in Schools D through G. Different criteria for salience were employed since the two response formats yielded difference amounts of variance.

Once person factors were determined in a given school, standardized regression factor scores were utilized to determine which items contributed to the emergence of each of the person factors, and thereby to determine the type of culture perceived to exist by the persons in a given factor. Since factor scores are z-scores, the scores indicate the degree to which individuals in a sample deviate from the mean response on a given item. These deviations help to differentiate person clusters. Hence, for the purposes of interpreting the person factors obtained in the factor analyses performed on the Phase II data, only items with factor scores greater than |1.5| were examined.

Although space limitations do not permit the reporting of separate Q-technique factor analytic results from each of the seven schools, suffice it to say that the factor structures resulting from these analyses indicated that multiple person factors existed in each of the seven schools in the sample. From three to seven unique person factors were extracted and interpreted in each of the seven schools, with a total of 32 person factors identified across the seven schools. Although the various identified person factors were unique in their cultural orientations, there appeared to be a number of item groupings which occurred often enough to suggest that they were dominant orientations across the schools studied. Typical item groupings which tended to distinguish persons within the given schools are presented in Tables 3 and 4. Table 3 indicates the frequency of positive orientation toward the item

groupings across the 32 identified person factors, while Table 4 indicates the frequency of negative orientation toward them. These results suggest that although the culture construct appears to be basically unitary in structure, different person prototypes can be identified, and schools differ with respect to the heterogeneity of person types represented.

Discussion

The purposes of the present study were to define an "ideal type" middle school culture grounded in the opinions of middle school advocates and to investigate middle school educators' perceptions of the presence of various cultural elements in their schools. This inquiry accepted as a premise that:

> No one study, however shrewdly designed and carefully executed, can provide convincing support for a causal hypothesis or theoretical statement in the social sciences. . . .How, then, does social science theory advance through research? The answer is, by collecting a diverse body of evidence about any major theoretical proposition. (Neale & Liebert, 1986, p. 290)

As Gorsuch (1983, p. 335) put it, "To the extent that invariance can be found across systematic changes in either variables or the individuals, then the factors have a wider range of applicability as generalized constructs." Given these premises, the study was conducted using two different pools of subjec (n's = 295 and 146), both R-technique analyses to investigate the clustering of variables and Q-technique analyses to investigate the clustering of person prototypes, several R-technique analytic methods, and two different Q-technique data collection strategies.

R-technique factor analytic methods (Cattell, 1966a) were utilized during Phase I to investigate the construct validity of the instrument. Both

exploratory and confirmatory factor analytic methods were used. The results indicated that the instrument was measuring culture as a unidimensional "g"- or general-factor construct rather than as a multidimensional construct, as had been anticipated. Coefficient alpha (.94) indicated that the instrument had a high degree of internal consistency. The instrument was then utilized during Phase II as a means of identifying organizational cultures in selected middle schools. During this phase, Q-technique factor analytic methods were utilized to examine the responses of subjects in seven different middle schools. The purpose of these analyses was to determine whether the instrument could be used to identify recognizable clusters of individuals relative to the culture construct.

The study was distinguished by several additional features. First, a rival hypothesis suggesting that a "g"-factor set was an artifact of response set was rejected by conducting some analyses only with subjects with larger intraindividual response variance statistics. Second, a rival hypothesis that a "g"-factor finding was an artifact of sampling error was rejected by computing prerotation eigenvalues separately both for Phase I subjects and for Phase II subjects. Third, a rival hypothesis that a "g"-factor finding was an artifact of subject inattentiveness was rejected by computing test-retest reliability coefficients for 71 Phase II subjects who answered a subset of three items twice.

Discussion of Phase I Analyses

As conceptualized by Schein (1985) an organization's culture consists of a set of group-held assumptions that can be generally classified into five content categories. Assumptions regarding the operation of the ideal middle school were gleaned from the writings of middle school advocates, and were

used to create items for the MSDS. The items were worded so as to reflect Schein's culture categories. It was hoped that this five-factor expected theoretical structure would be validated by the data collected from the Phase I sample; however, the results of the various R-technique factor analytic procedures confirmed each other in clearly indicating the presence of a single dominant unidimensional "g" construct. This conglomeration of items intended to measure several different constructs within a single factor may indicate that Schein's cultural categories are conceptually distinct, but may not be as easily distinguished in reality. These findings seem to be consistent with Schein's (1985) assertion that observed organizational cultures may not always fit into neat paradigmatic packages.

Often when first-order exploratory factor analysis fails to produce a desired or interpretable result, a second order factor analysis will be employed to determine if a relatively large number of first order factors can be subsumed in a smaller number of more general second-order factors (Gorsuch, 1983). However, in the present case, these methods served only to confirm the presence of a single unidimensional "g" construct as suggested by the results presented in Tables 3 through 6.

Confirmatory factor analytic methods are designed to optimally match theoretical and observed factor structures. Two confirmatory analyses were utilized to determine the degree to which the observed factor structure of the MSDS matched the theoretical structure. LISREL goodness-of-fit indices generated by these analyses indicated that the observed factor structure of the instrument did not adequately match the expected structure. These results were further corroborated by confirmatory "Procrustean" rotation procedures.

In sum, the results of all of these analyses consistently pointed to the

same general conclusion--that a "g"-factor solution is the correct interpretation of the R-technique factor analytic results. It is especially noteworthy that this result was confirmed both across analytic methods and across independent subject samples, since the prerotation eigenvalue for Factor I (15.81) for the 71 Phase II subjects from Schools D through G replicates the result (18.07) reported for the 248 different subjects participating in Phase I. Based on these statistical results, the first null hypothesis was rejected.

Discussion of Phase II Analyses

The second null hypothesis stated that no identifiable clusters of people would emerge within selected middle schools when responses on the MSDS were intercorrelated and factor analyzed using the Q-technique. This hypothesis was addressed by consulting the results of seven Q-technique factor analyses. In each of the seven selected schools, the results of Q-technique factor analysis indicated that the subjects' responses to items on the MSDS served as an effective means of identifying clusters of individuals relative to the cultural construct measured by the instrument. However, since unstructured Q-methodology was used, it was somewhat difficult to classify the clusters of individuals according to any set criteria. In fact, the 32 clusters of individuals that were identified in the seven different schools as a result of these analyses were characterized by a high degree of uniqueness, even though many clusters shared at least some characteristics with others.

Also interesting was the large number of person factors extracted in each of the seven schools. These distinctive person clusters within a single school may represent "subcultural divisions" (Morgan, 1986) of a single school culture. Ranges in the observed schools of from three to seven distinct

cultural orientations indicate that the faculties in these schools may lack the cohesiveness necessary to function as a unified cultural group. Morgan (1986, p. 127), however, suggests that many organizations function in this way: "In organizations there are often many different and competing value systems that create a mosaic of organizational realities rather than a uniform. . .culture." The identification of numerous person factors within the several schools may appear counterintuitive since the R-technique analyses had indicated the presence of a unitary conceptual factor across the items. Cattell (1952) points out, however, that this is not unusual considering that R-technique capitalizes on correlation among variables whereas Q-technique capitalizes on the sameness of response means across items.

Based upon these results, the second null hypothesis, stating that the MSDS could not be used to identify interpretable person factors was rejected. Factor scores which deviated at least 1.5 standard deviations from the mean were used to identify the items differentiating the 32 clusters of people within the seven schools. Since the format of the Q-sort was unstructured, the identity of the person factors could not be compared against a theoretical model. Instead the person factors were compared using common item themes.

Summary

The findings of the present study indicate that the MSDS is a useful instrument for determining the orientation of educators toward the organizational culture of the schools in which they work. Use of the instrument with educators in middle schools indicated that it can be useful in identifying distinctive clusters of individuals. The instrument also proved useful in identifying themes which were of more or less importance to the cultural orientation of persons of a given cluster.

As a possible way of assessing culture within a given middle school without the need for more obtrusive measures, use of the MSDS is promising. However, the construct validity of the MSDS is not without question. It may be helpful to refine the items and to add additional items to help to identify expected underlying factor structures. Additional construct validity investigations employing exploratory and confirmatory factor analytic methods may help to further establish the instrument's validity.

Finally, the impact of using the types of methodology employed here on the practice of the middle school needs to be investigated further. For approximately three decades, middle school advocates have attempted to determine why middle schools have enjoyed only partial success and are still fighting for institutional viability. The potential value of being able to use a paper and pencil instrument to assess how well a faculty or a group within a faculty buys into the concept of the middle school culture is noteworthy. Such an assessment could also key school administrators into particular areas of the culture which are fragmented or which need to be emphasized.

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APPENDIX A

Items Included in the Middle School Description Survey

CONTENT CATEGORY #1--Humanity's Relationship to Nature

Most of the people who work in the middle/junior high school I know best agree on the basic goals and mission of the school.
In the middle/junior high school I know best considerable effort is devoted to getting parent, community, and business groups involved in the school program.
In the middle/junior high school I know best values are stressed that are consistent with those of the local community.
In the middle/junior high school I know best efforts are made both to communicate with and improve relations with the community.
Most of the people who work in the middle/junior high school I know best have accurate perceptions of the family life of the students.
Most of the people who work in the middle/junior high school I know best are very much aware of the elementary program their students come from and the high school program to which they will be going.
In the middle/junior high school I know best the principal tries to "buffer out" any influence by parents or community members.
Most of the people who work in the middle/junior high school I know best consult with teachers at other middle schools regarding common problems or concerns.
Most of the people who work in the middle/junior high school I know best are out of touch with the reality of who students are today.

CONTENT CATEGORY #2--The Nature of Reality and Truth

In the middle/junior high school I know best, teachers are encouraged to work together in interdisciplinary teams.
In the middle/junior high school I know best, all classes meet the same number of times each week for the same amount of time.
In the middle/junior high school I know best, scheduling is basically the job of the administration.
In the middle/junior high school I know best, teachers get opportunities to work closely and cooperatively with other staff members.
In the middle/junior high school I know best, it is important for teachers to socialize informally with students outside the classroom.
In the middle/junior high school I know best, there is a student advisement program that allows every student to receive regular, supportive counsel from a concerned adult.
In the middle/junior high school I know best, curriculum and instruction decisions are primarily the work of the school administration.
In the middle/junior high school I know best, frequent adjustments in the school schedule are frowned upon by most people who work there.
In the middle/junior high school I know best, a majority of decisions regarding the school budget are made at the building level.
In the middle/junior high school I know best, the schedule allows for blocks of time to be allocated to more than one subject area.
In the middle/junior high school I know best, teachers view inservice

workshops as a waste of time.
In the middle/junior high school I know best, teachers are encouraged to help each other evaluate the effectiveness of their instructional strategies.
In the middle/junior high school I know best, teachers are discouraged from talking openly about any serious school matter.
In the middle/junior high school I know best, teachers receive regular inservice training on early adolescent development.
In the middle/junior high school I know best, teachers tend to talk with students other than those they teach.
In the middle/junior high school I know best, decisions are usually made based upon the needs of the students served rather than upon administrative concerns.

CONTENT CATEGORY #3--The Nature of Human Nature

In the middle/junior high school I know best, teachers tend to view the principal as an instructional leader.
Most of the people who work at the middle/junior high school I know best enjoy working there.
In the middle/junior high school I know best, school spirit and unity are promoted by such symbolic actions as wearing school colors, promoting school mottoes, etc.
In the middle/junior high school I know best, a considerable amount of effort is devoted to improving faculty morale and school spirit.
Most of the people who work in the middle/junior high school I know best support the overall school program.
In the middle/junior high school I know best, the principal may often be seen touring the school or visiting classrooms.
In the middle/junior high school I know best, most of the students are happy the majority of time they are at school.
In the middle/junior high school I know best, students are allowed certain periods of the day when they can be noisy and exert themselves physically.
In the middle/junior high school I know best, most teachers reward students' curiosity.
In the middle/junior high school I know best, the principal interacts with students.
In the middle/junior high school I know best, teachers expect students to behave as adults.
In the middle/junior high school I know best, teachers believe that all students will become interested in school if learning is made appropriate to their interests and needs.

CONTENT CATEGORY #4--The Nature of Human Activity

Most of the people who work in the middle/junior high school I know best hold to a philosophy of education that is subject-centered rather than student-centered.
In the middle/junior high school I know best, much planning is done to ensure the emotional security of students.
In the middle/junior high school I know best, concerted efforts are made to match instruction to the individual needs of each student.
In the middle/junior high school I know best, elective classes stress

exploration rather than mastery of subject matter.

In the middle/junior high school I know best, most teachers regularly include physical activity and hands-on experience as a part of classroom instruction.

In the middle/junior high school I know best, teachers like to involve students in the planning and evaluation of school programs.

Most of the people who work in the middle/junior high school I know best think it is important to prepare early adolescent students for the amount of independence needed in high school.

In the middle/junior high school I know best, the majority of teachers are willing to experiment with new approaches to teaching.

In the middle/junior high school I know best, students are given opportunity for meaningful input into decision-making.

In the middle/junior high school I know best, teachers are allowed to develop their own approaches to student discipline rather than conforming to a school-wide plan.

In the middle/junior high school I know best, students are actively encouraged to express, evaluate, and try out new ideas.

In the middle/junior high school I know best, the faculty and administration have high expectations of all students.

In the middle/junior high school I know best, students are encouraged to participate in competitive interscholastic activities such as team sports.

In the middle/junior high school I know best, the acquisition of skills is emphasized over the mastery of subject matter.

CONTENT CATEGORY #5--The Nature of Human Relationships

In the middle/junior high school I know best, each student has at least one adult who has a designated responsibility for that student's welfare.

In the middle/junior high school I know best, teachers provide a supportive atmosphere for meeting individual student needs, welcoming wide ranges of student diversity.

In the middle/junior high school I know best, teachers who teach the same subjects have their classrooms located close to one another.

In the middle/junior high school I know best, it is common for faculty members and administrators to share stories about students who are noted for their remarkable success in school.

In the middle/junior high school I know best, students at different grade levels are generally kept apart from one another.

In the middle/junior high school I know best, faculty and staff members show a lot of respect for one another.

In the middle/junior high school I know best, the principal likes to share his/her vision of what the school should be.

In the middle/junior high school I know best, the principal often rewards teachers who are doing a good job.

In the middle/junior high school I know best, a healthy balance is maintained between competition and cooperation.

Most of the people who work in the middle/junior high school I know best interact frequently with their co-workers.

Table 1
Varimax Rotated Four Factor Solution
Using Middle School Subsample
(n = 248)

	I	II	III	IV
ITEM1	.47204	.37614	.00933	.03125
ITEM2	.14070	.40145	.10577	-.03121
ITEM3	.18569	.43214	.04123	-.02627
ITEM4	.11578	.45191	.41608	.09138
ITEM5	.14158	-.29293	-.13580	.43681
ITEM6	.12484	.16934	.19186	.16277
ITEM7	.46005	.17752	.43067	.13983
ITEM8	.14978	-.11989	-.25951	.34600
ITEM9	-.00885	.27885	-.08473	.03579
ITEM10	.30516	.50327	.37912	.13681
ITEM11	.18942	.75311	.09662	-.16344
ITEM12	-.31908	-.20485	.14418	.41367
ITEM13	-.31287	.27113	.23022	.05032
ITEM14	.40140	.23871	.11202	.03686
ITEM15	.48562	.31243	.07842	-.10252
ITEM16	.63815	.37337	.19123	-.06058
ITEM17	.46886	.52591	.28424	-.04890
ITEM18	.59123	.21171	.32080	.02089
ITEM19	.37071	.57236	.32648	-.06430
ITEM20	.69246	.09715	.16256	-.03214
ITEM21	-.39563	.02516	-.06123	.44571
ITEM22	.59419	.08098	.12556	-.00966
ITEM23	.32546	.35736	.27326	-.02311
ITEM24	-.06635	.02736	-.08581	.42333
ITEM25	-.06525	.06106	-.04394	.55209
ITEM26	.40034	.57107	.36808	-.10906
ITEM27	.58805	.44407	-.00628	.05269
ITEM28	.36880	.65171	.05932	-.01270
ITEM29	.49867	.36568	.36607	.16251
ITEM30	-.18198	.17739	.28244	.36800
ITEM31	.49142	.66640	.17413	-.06956
ITEM32	.61436	.24085	.08881	-.04341
ITEM33	.24190	.41821	.36413	-.11563
ITEM34	.53706	.31869	.33256	.01924
ITEM35	.43848	.22036	-.12806	-.10508
ITEM36	.48996	.15276	.23222	-.00463
ITEM37	.41249	.59389	.10419	-.05029
ITEM38	.72893	.15178	.24472	-.12058
ITEM39	-.02209	.04462	.52346	-.06138
ITEM40	.01802	-.21235	.01821	.54505
ITEM41	.14045	.71847	.11277	-.18553
ITEM42	.19262	.51050	.27622	-.16124
ITEM43	.30848	.23614	.23735	-.01766
ITEM44	.64231	.20560	-.11359	-.05558
ITEM45	.51340	.29453	.26374	-.16943

	I	II	III	IV
ITEM46	.45442	.02100	.12576	-.05066
ITEM47	.69509	.24004	.23625	-.05871
ITEM48	.55922	.35238	.17268	-.14549
ITEM49	.56764	.35064	.31343	-.06334
ITEM50	.12658	.22250	.50552	-.13684
ITEM51	.31193	-.04333	.32229	.20437
ITEM52	-.00802	-.02179	-.47950	.45104
ITEM53	.51467	.45844	.36898	-.04529
ITEM54	-.30799	-.14812	-.02499	.19351
ITEM55	.49969	.07255	.28954	.03492
ITEM56	.60880	.13208	.15558	.00098
ITEM57	.43950	.17826	.52229	-.13821
ITEM58	.29677	-.02497	.55930	-.06729
ITEM59	.35643	.04178	.60031	-.14373
ITEM60	.42974	.30403	.61911	-.04424
ITEM61	.41754	.39963	.54925	-.02289

Table 2
Varimax Rotated Five Factor Solution
Using Middle School Subsample
(n = 248)

	I	II	III	IV	V
ITEM1	.48408	.22943	.00363	.30707	.01670
ITEM2	.15303	.28950	.10066	.32303	-.03676
ITEM3	.18986	.25607	.05735	.43998	-.04960
ITEM4	.13542	.36738	.40258	.33802	.09515
ITEM5	.12186	-.36094	-.09377	-.02936	.40196
ITEM6	.12578	.08222	.20645	.22138	.14751
ITEM7	.47918	.18290	.40144	.03689	.15231
ITEM8	.13238	-.25232	-.21586	.12168	.30523
ITEM9	-.03019	.03643	-.01490	.53955	-.02086
ITEM10	.33729	.43041	.33940	.27978	.15246
ITEM11	.23864	.68038	.02040	.32094	-.12581
ITEM12	-.33629	-.23293	.18830	.04767	.39110
ITEM13	-.29121	.29200	.19942	.10992	.07676
ITEM14	.42050	.20267	.08165	.08279	.04583
ITEM15	.49074	.19236	.08128	.26982	-.11905
ITEM16	.64363	.22287	.19861	.34309	-.08348
ITEM17	.50401	.46927	.23138	.22615	-.02736
ITEM18	.59666	.13641	.32167	.18063	.00819
ITEM19	.41637	.55953	.25135	.17193	-.02492
ITEM20	.70705	.10157	.13104	-.05584	-.02408
ITEM21	-.39811	-.05933	-.03790	.17197	.43057
ITEM22	.59917	.04492	.11701	.02905	-.01618
ITEM23	.37686	.45748	.17188	-.11864	.03868
ITEM24	-.03837	.06681	-.13774	-.14088	.45356
ITEM25	-.04019	.05395	-.08208	-.03910	.57091
ITEM26	.44239	.55241	.30025	.19474	-.07410
ITEM27	.60291	.26703	-.01426	.35951	.03518
ITEM28	.41771	.57909	-.01848	.24324	.02148
ITEM29	.53723	.36589	.30222	.06214	.19309
ITEM30	-.16242	.16956	.26110	.10129	.38354
ITEM31	.53703	.58662	.10362	.27637	-.04073
ITEM32	.63666	.21682	.04731	.02939	-.03075
ITEM33	.29526	.53339	.25967	-.09087	-.04821
ITEM34	.57508	.35694	.26194	-.02246	.05601
ITEM35	.50646	.17962	-.16336	.03637	-.09661
ITEM36	.51364	.19246	.18438	-.07297	.01914
ITEM37	.44351	.47048	.06468	.34576	-.04149
ITEM38	.73984	.13720	.22298	.02012	-.11868
ITEM39	-.02056	.10469	.52378	.01947	-.05185
ITEM40	.01476	-.23121	.03064	-.07308	.53340
ITEM41	.20254	.73197	.00291	.14843	-.12186
ITEM42	.25632	.63544	.15087	-.09938	-.08093
ITEM43	.31886	.19005	.22709	.15461	-.01773
ITEM44	.64387	.07511	-.10908	.19320	-.07861
ITEM45	.53707	.30281	.21960	.04674	-.14896

	I	II	III	IV	V
ITEM46	.48367	.14478	.05410	-.28914	-.00793
ITEM47	.71261	.20776	.20629	.07058	-.05309
ITEM48	.57768	.29201	.14483	.16986	-.14065
ITEM49	.58779	.29980	.28492	.17111	-.05676
ITEM50	.15975	.35624	.43781	-.11545	-.08582
ITEM51	.33121	.04720	.28069	-.19677	.23062
ITEM52	.00077	-.10633	-.49000	.00132	.44446
ITEM53	.54577	.41854	.32206	.18976	-.02607
ITEM54	-.28418	.01471	-.08439	-.35214	.24216
ITEM55	.48459	-.03886	.33162	.23246	-.00255
ITEM56	.59735	-.00498	.19034	.25356	-.03696
ITEM57	.44703	.19017	.51246	.08413	-.13359
ITEM58	.27213	-.07532	.61711	.19419	-.10308
ITEM59	.36100	.11602	.58952	-.04163	-.13228
ITEM60	.45505	.33957	.57817	.07323	-.01966
ITEM61	.45590	.44387	.48329	.05741	.01603

Table 3
Instance of Positive Orientation Toward Various Item Groupings Among the 32 Identified Person Factors

Item Grouping	Instances of Observation
Teacher Behavior	13
Student-Centeredness	10
Administrative Behavior	7
Symbolic/Values Orientation	6
School Flexibility	5
Instruction	1
Decision Making	1
Scheduling	1
Teacher/Student Satisfaction	1

Table 4
Instance of Negative Orientation Toward Various Item Groupings Among the 32 Identified Person Factors

Item Grouping	Instances of Observation
Flexibility*	15
Administrative Behavior	10
Decision Making	6
Teacher Behavior	4
Student-Centeredness	3
Human Relations	3
Community Relations	1
Symbolic/Value Orientation	1

*This item grouping is reported in the text as a positive orientation toward school rigidity.